

**REMARKS**

***Information Disclosure Statement***

Issues remain outstanding with respect to three of the disclosed references.

Those are the references designated AZ, BC, and BD.

(Applicants acknowledge that the fourth reference, BE, discussed in Applicants' most immediate prior Response, has not been examined.)

The references in question are now addressed in turn:

AZ	France	FR 2,492,159	Apr. 16, 1982	Thomson-CSF
	BC		MCP Imaging Detectors for X, EUV, VUV, UV, neutron, ion and electron fields imaging. Copyright 1999, 2000, 2001 [retrieved on 2003-01-03]. Retrieved from the Internet:, <URL: <a href="http://www.sciner.com/MCP/MCP_detector.html">http://www.sciner.com/MCP/MCP_detector.html</a> >	
	BD		Position-sensitive two dimensional neutron detector and imaging system. Copyright 1999, 2000 2001 [retrieved on 2002-06-10]. Retrieved from the Internet:, <URL: <a href="http://www.sciner.com/Neutron/neutron_imaging.html">http://www.sciner.com/Neutron/neutron_imaging.html</a> >	

Each of the foregoing items was disclosed in Applicants' Information Disclosure Statement of February 9, 2004.

Item AZ has been found noncompliant with 37 CFR 1.98(a)(3)(i) (requiring a concise explanation of relevance as understood by the individual designated in 1.56(c) most knowledgeable about the content of the information). Item AZ was properly disclosed (as Reference "AD"), in parent application US Ser. No. 10/156,989, in an Information Disclosure Statement filed on July 24, 2003. Section 7A of that Information Disclosure Statement recited that "French Patent No. FR 2,492,159 [Ref. No. AD] is submitted on the basis of the accompanying ... EPO search report that is in the English language." The EPO search report was included with the IDS of July 24, 2003.

It has been the understanding of Applicants' undersigned representative that compliance, with respect to a reference, with paragraphs (a) through (c) of 37 CFR

§1.98 in an earlier application, relied upon for 35 U.S.C. 120 purposes, fulfills the requirements of “properly” identifying the reference, and thus qualifies the reference for consideration in accordance with MPEP §609(I)(A)(2). Acknowledging that the interpretation of Applicants’ representative would not bind the USPTO, even if correct, Applicants are resubmitting reference AZ, along with the EPO search report that prompts its consideration, in a Supplemental Information Disclosure concurrently filed herewith.

Items BC and BD are found incompliant with 37 CFR 1.98(b)(5) in that “location” (which Applicants associate with the regulatory requirement that the place of publication be disclosed), specific date, and author information are absent. With respect to the author and specific date of publication, the parties subject to the duties of 37 CFR 1.56 have no idea by whom, or when, references BC and BD were composed or posted, and are thus not in a position to provide that information, though Del Mar Ventures is based in San Diego, CA, if that’s helpful. All that is known is that both references were posted to the World Wide Web. The URLs and accession dates for both are provided in the aforesaid Supplemental Information Disclosure Statement that is being filed herewith. It is hoped that they may be found suitable for consideration by the USPTO.

***Substantive Teachings and Claims of the Present Application***

Claims 1-13, 22-25, 49-51, and 58 are currently pending in the Application, of which claims 1 and 49 are the only pending independent claims.

Of the pending claims:

- claims 1, 3 and 4 stand rejected as anticipated by Krug;
- claims 49-51 and 58 stand rejected as anticipated by US Patent No. 6,347,132 (Annis2);
- claims 1-3, 6-8, 13 and 22-24 stand rejected as unpatentable over Gozani in view of Swift;
- claim 4 stands rejected as unpatentable over Gozani in view of Swift, and further in view of Armistead;

- claim 5 stands rejected as unpatentable over Gozani in view of Swift, and further in view of Czirr;
- claims 9-11 and 25 stand rejected as unpatentable over Gozani in view of Swift, and further in view of US Patent No. 4,809,312 (Annis1);
- claim 12 stands rejected as unpatentable over Gozani in view of Swift, and further in view of Annis1 and Reznick; and
- claim 2 stands rejected as unpatentable over Krug and Applicants' Admitted Prior Art.

*Anticipation and Obviousness Rejections over Krug*

The standing rejection of independent claim 1 hinges on Krug's teaching of a dedicated transmission detector **60**, thereby suggesting that Krug's processor is of a kind that generates an output indicating when the detector signal is triggered other than by backscattered illuminating penetrating radiation – namely, when it is triggered by transmitted radiation from the same illuminating source.

Claim 1 is amended hereby to require, not only that the processor indicate triggering of the detector signal by non-backscattered radiation from the illuminating source, but to require that the processor indicate triggering by an origin not deriving from the illuminating beam. Such triggering of a detector signal may occur (for example) when the source of illuminating penetrating radiation has a substantially zero intensity. The advantages of such operation are amply described in the present Application.

Krug neither teaches nor suggests any processor that can discriminate when a detected signal is other than a detection of photons of the illuminating beam.

This reason alone serves to distinguish independent claim 1, and all claims depending therefrom, as patentable over Krug, as well as over Krug in combination with AAPA, and their allowance over Krug is respectfully requested.

Anticipation Rejection over Annis2

Reconsideration of what Annis2 teaches, and doesn't teach, is respectfully requested. The passage cited (col. 3 of Annis2) for the proposition that Annis2 teaches "distinguishing between detected penetrating radiation scattered by the object and detected emission due to the clandestine nuclear material" (hereinafter "CNM") is presented here, IN CONTEXT.

object under inspection. That is, since the nuclear weapons materials absorb x-rays significantly more than any other materials, the magnitude of the sampled signals associated 55 with areas within the object under inspection having nuclear weapons materials will be significantly different than the surrounding areas. Therefore, threshold detection is a suitable automatic detection technique. Alternatively, spatial frequency analysis may also be used to detect large changes 60 in the sampled signal magnitude, which may then be analyzed to determine whether or not the large changes in magnitude are consistent with nuclear weapons materials. In any event, detection of the nuclear weapons materials is automatic. Similarly, the region of high attenuation identi- 65 fied in the transmission image is examined in the scatter image (if the pencil beam system is employed). A negative

(Annis2, column 3)

Annis2 teaches detecting changes in magnitude of signal (transmission or scatter), and teaches that large absorption by nuclear weapons materials will cause large changes in the magnitude of signal. It teaches that those large changes may be detected automatically, and that spatial frequency analysis may be used to detect those changes too (since the transition, presumably, would be spatially abrupt). Annis2, however, does NOT teach distinguishing between scattered radiation and emission due to CNM. Indeed, absent scattered radiation, Annis2, according to his teachings, would not be able to detect the unusually high absorption that, again according to Annis2, is the signature of CNMs.

For this reason, claim 49 and the claims dependent therefrom are neither taught nor suggested by Annis2, and, are patentable over this reference.

Obviousness Rejections over Gozani et al.

Concisely stated, Gozani et al. have, in Gozani's own parlance, a "conventional" transmission x-ray imaging system, using a detector that is not shown, and, additionally, provides distinct detectors for neutron-induced gamma-rays. In other words, all the detection that Gozani teaches is detection of radiation that derives from the incident beams, of which Gozani teaches two: an incident x-ray beam and an incident beam of fast neutrons.

Amended claim 1 now requires a processor configured as a detector signal discriminator that generates an output indicating whether the detector signal is triggered at least in part by an origin other than the illuminating penetrating radiation. All the detector signals taught by Gozani, or, for that matter, by Swift, have an origin in the illuminating penetrating radiation.

This moots the Examiner's proper rejoinder in the last paragraph of page 14 of the Office Action.

The simple grounds for allowance of independent claim 1 over Gozani - whether or not combined with Swift - are that there is no suggestion in either Gozani or Swift, or in their combination, to provide a processor configured as a detector signal discriminator that, in particular, generates an output indicative of whether the detector signal is triggered other than by the illuminating penetrating beam (or, in the case of Gozani, other than by either of the two illuminating penetrating beams).

Thus, amended claim 1, and all claims depending therefrom, are allowable over Gozani, whether or not taken in combination with Swift.

Absent a teaching of the claimed feature by one or more of the other references, alone or in combination, claim 1 and its dependent claims remain patentable over the entire suite of cited references. For completeness:

Krug does not provide any suggestion of a discriminating between induced and spontaneous characteristic emission, as has been discussed above.

Armistead is another photoneutron/x-ray imaging system, again dependent upon the incident flux for detection of a signal.

Czirr may be said to distinguish beta from gamma radiation, though not in the

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context of incident radiation applied to illuminate an object. There is no reason that Gozani would seek to do so, since all of Gozani's detection is of radiation induced by an incident beam.

The beam gating taught by either Annis1 or Resnick, again, does not provide the requisite teaching of a processor configured as a signal discriminator, whether taken separately or in combination with Gozani.

Consequently, it is requested that upon reconsideration of the pending claims, including the present amendment, in light of the foregoing discussion, all pending claims now be allowed.

Respectfully submitted,

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